

## Construction Specification

### 432. DRY HYDRANT

#### 1. SCOPE

The work shall consist of furnishing materials and installing all components of a dry hydrant, as outlined in this specification and to the dimensions and grades shown on the drawings.

#### 2. MATERIALS

All materials shall be new, with manufacturers' warranties, as applicable. Their estimated minimum service life shall be 10 years or more, or as otherwise specified in Section 6.

**a. Pipe.** The pipe material installed for the hydrant system shall conform to the following specifications:

Iron	ANSI/AWWA C151/A21.51 ANSI/AWWA C115/A21.15
Steel	ASTM-A-120, AWWA-C-202 ASTM-A-53 ASTM-A-134 ASTM-A-135
Plastic	PVC ASTM D1785 PVC ASTM-D-2241 SDR-26+ ABS ASTM-D-2282 SDR-26+

The pipe and fittings, where applicable, shall be marked by the manufacturer as described in the applicable ASTM or ANSI/AWWA specification. Fittings shall be rated, in strength and quality, equal to the pipe being specified.

Joints shall be air and water tight and shall meet the requirements of the applicable ASTM or ANSI/AWWA standards.

**b. Dry Hydrant Head.** The hydrant sleeve shall be made of bronze, brass, aluminum alloy or other durable, non-corrosive metal. Sleeve must be permanently affixed inside a PVC head using epoxy adhesive and stainless steel bolts.

The hydrant head shall be able to accept a 6-inch NHT (American National Fire Hose Thread) connection to provide maximum supply, and shall conform to ASTM 2466.

All hydrants shall contain a removable head strainer and stainless steel snap ring that can be removed without special tools. The strainer shall be conical in shape to maximize straining area. Unless otherwise approved prior to installation, all hydrants shall use a rubber "O" ring between the threaded sleeve and PVC head.

**c. Dry Hydrant Cap.** The cap shall be of snap-on/snap-off design and removable without special tools. It shall be joined with a steel cable or chain and be permanently attached to the dry hydrant head. The cap shall be hard plastic or of same metal as NHT connection for maximum corrosion resistance.

**d. Strainer.** Fabricate a strainer of material compatible with the pipe or use corrosion resistant manufactured well screens. Individual inlet holes shall not exceed 3/8-inch diameter. All components, including pins, shall be non-corrosive. Screens and strainers shall have a minimum surface area of 4 times the pipe cross sectional area. A strainer may be formed by drilling 1/4-inch to 3/8-inch diameter holes with a minimum of one-hole diameter between the holes in PVC pipe. Drilled holes shall be deburred and the pipe cleaned before putting the strainer into service. The screens or

strainers shall be capped with a removable end cap.

**e. End Cap.** The end cap must be easily removed without special tools. Perforations are required in the end cap to improve flow conditions into the strainer and for jetting action for silt cleanout.

Other required materials shall be as shown in the drawings, or as defined in Section 6 of this specification. However, the contractor shall verify that all equipment furnished as part of the dry hydrant system is compatible with the local fire department(s) equipment.

### 3. CERTIFICATIONS

The dry hydrant system shall be certified by the contractor responsible for the final installation to the fact that it conforms to all the applicable construction specifications and requirements of the material and/or equipment manufacturers.

### 4. STRUCTURAL INSTALLATION

All components of the system shall be installed to the lines and grades as shown on the drawings.

All equipment shall be installed to the manufacturers' recommendations.

**a. Pipe.** The pipe shall be fitted with intake screen or strainer and standard fire truck hose adapters for quick connect/release operations acceptable to the local fire department.

PVC pipe shall be protected from ultraviolet rays by painting with an exterior latex or similar paint.

The depth at which the pipe is installed shall be below the frost-free depth for the area.

All pipes shall be installed to provide water tight and airtight joints. Pipe shall be placed on undisturbed soil or non-yielding compacted material. Over excavation must be corrected as noted on the drawings or as directed by the responsible engineer or his designated representative. Backfill shall be placed so as not to damage the pipe nor disturb alignment in any way. All pipes shall be properly bedded as designated on the drawings or in Section 6.

**b. Pipe Intake.** The pipe intake shall be installed at the depth shown in the drawings. Where the intake is more than 3 feet off the bottom, a trash rack may be used in lieu of a screen.

A dry hydrant installation shall provide for a positive slope toward the water source. In pits or impoundments, the intake screen or strainer shall be supported and secured at least two feet above the pool bottom. The intake shall be at least 4 feet beyond the earth slope.

**c. Testing.** Allow pipe joint sealants to cure before testing the piping system. The contractor is responsible for performing an initial pump test at the design capacity after installation to confirm satisfactory operation. Give careful attention to silt, debris, or other interference that may limit the full operation of the hydrant.

**d. Access.** Vehicle access to and from the dry hydrant shall be provided for fire truck and pumper units. Access shall have an all-weather surface, be well drained and be at least 12 feet wide for ease of movement by personnel and equipment during an emergency.

## **5. VEGETATION**

All exposed earth surfaces shall be protected by a vegetative cover as soon, after installation of the structure, as practical. Vegetation, if required, shall be established at the locations shown on the drawings and/or staked in the field, and as set forth herein, in Section 6, and/or as shown on the drawings.

## **6. ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE:**